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10/627,828

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Ronald D. Blum

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EXAMINER

SCHWARTZ, JORDAN MARC

ART UNIT

PAPER NUMBER

2873

DATE MAILED: 01/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

10/627,828

**Applicant(s)**

BLUM ET AL.

**Examiner**

Jordan M. Schwartz

**Art Unit**

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 18 October 2004.  
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 84 and 86-92 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 84 and 86-92 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.  
10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.  
5) ☐ Notice of Informal Patent Application (PTO-152)  
6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Claim Objections***

Claim 84 (and respective dependent claims 86-90) is objected to for the following reasons. Since the intended meaning could be determined from the specification and the Figures, 112 rejections were not made but instead these lack of clarity issues are being raised in the following claim objections.

With respect to claim 84, that part of the claim stating "a plurality of conductive electrode grids or arrays" creates a lack of clarity for the following reason. Throughout the specification, applicant discloses a plurality of electrodes within a grid or array i.e. a single grid or array with a plurality of electrodes (as opposed to a plurality of grids or arrays). This is apparently applicant's intended meaning and what is supported by the specification and Figures instead of the claimed "plurality of grids or arrays". It is suggested that applicant change this part of the claim to state "a plurality of conductive electrodes arranged in a grid or array" or similar language to provide the required clarity.

### ***Claim Rejections - 35 USC § 112***

Claim 91 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

With respect to claim 91, that part of the claim stating "the electrodes isolated from another" renders the claim vague and indefinite. It is not clear if applicant is claiming "each electrode is isolated from other electrodes" (which is the assumed meaning for purposes of examination, i.e. as in claim 84, each electrode is isolated from

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at least some of the other electrodes) or if applicant is claiming "each electrode is isolated from each other electrode" (i.e. each electrode is isolated from every other electrode) or if applicant is claiming "a plurality of electrodes isolated from other electrodes", or "a plurality of electrodes isolated from each other electrode", or if some other meaning is intended and the lack of clarity renders the claims vague and indefinite.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 84, 86-88 and 90-92 are rejected under 35 U.S.C. 102(e) as being anticipated by Birdwell patent number 6,774,871.

Birdwell reads on these claims by disclosing the limitations therein including the following: an electro-active lens (abstract, column 8, lines 7-16, column 11, line 39); an electro-active material of a substantial constant thickness (column 11, line 39 and Figure 4B and 5A re "54" and "70" of "substantial constant thickness"); at least one alignment layer to align molecules of the electro-active material (column 13, line 12); a plurality of conductive electrodes arranged in a grid or array (column 13, line 10, Figures 4B and 5A); comprising a plurality of elements (column 13, line 10, Figures 4B and 5A

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re the elements "48" and/or "52"); each grid or array element as an electrode (column 13, line 10, Figures 4B and 5A i.e. each element "48" or "52" is an electrode); each electrode isolated from other electrodes by an insulating material of silicon oxide (column 16, lines 36-40). The insulating material will inherently be transparent, this being reasonably based upon Birdwell disclosing this material as silicon oxide, similar to that of the claimed invention. Birdwell further discloses the electro-active material containing a liquid crystal (column 11, line 39); the grid or array of electrodes in electrical contact with at least one layer of electro-active material (Figures 4B and 5A, column 11, lines 20-67); the optical power of the lens is varied by altering an applied voltage from a power source to individual electrodes of the grid or array (column 11, lines 20-67, column 12, lines 25-39); the electro-active material causing a change in the refractive index of the electro-active material (column 11, line 58 to column 12, line 61). It is believed that the change in refractive index would be at least 0.02 units per volt, this being reasonably based upon Birdwell disclosing the changing index of refraction producing the profiles of Figures 4A, 4C and 4D (column 12, lines 25-61), as well as being based upon the similarity in structure to that of the claimed invention.

Claims 84 and 90-91 are rejected under 35 U.S.C. 102(e) as being anticipated by Winarski et al patent number 6,317,190.

Winarski et al reads on these claims by disclosing the limitations therein including the following: an electro-active lens (abstract); an electro-active material of a substantial constant thickness (column 1, line 37, Figure 3 re the thickness of the material between "31" and "33" is "substantially constant"); at least one alignment layer to align molecules

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of the electro-active material (abstract, column 3, lines 12-40); a plurality of conductive electrodes arranged in a grid or array (Figures 2 and 3, electrodes "45", column 3, lines 12-22 with the electrodes arranged in a linear array); comprising a plurality of elements (Figures 2 and 3, column 3, lines 12-22 re elements "45"); each grid or array element as an electrode (Figures 2 and 3, column 3, lines 12-22, each element "45" as an electrode); each electrode isolated from other electrodes by an insulating material (Figure 4, column 2, lines 46-62 re insulating material "35" used to separate each electrode from other electrodes). Winarski et al further discloses the electro-active material containing a liquid crystal (abstract); the grid or array of electrodes in electrical contact with at least one layer of electro-active material (Figures 2 and 3); the optical power of the lens is varied by altering an applied voltage from a power source to individual electrodes of the grid or array (column 1, lines 6-52); the electro-active material causing a change in the refractive index of the electro-active material (column 1, lines 6-52). It is believed that the change in refractive index would be at least 0.02 units per volt, this being reasonably based upon Winarski et al disclosing the changing index of refraction producing a changing optical power of the electro-active lens (column 1, lines 6-52) similar to that of the claimed invention.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 86-88 are rejected under 35 U.S.C. 103(a) as being unpatentable over Winarski et al in view of Birdwell.

Winarski et al discloses as is set forth above but does not specifically disclose the insulating material as silicon oxide or as a substantially transparent material. Birdwell teaches that in an electro-active lens using an insulating material, that it is desirable to use silicon oxide as the insulating material for the purpose of providing an effective means of electrical insulation (column 16, lines 36-40). Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to have the insulating material of Winarski et al as silicon oxide since Birdwell teaches that in an electro-active lens using an insulating material, it is desirable to use silicon oxide as the insulating material for the purpose of providing an effective means of electrical insulation. The insulating material taught by Birdwell will inherently be transparent, this being reasonably based upon Birdwell teaching the use of silicon oxide, similar to that of the claimed invention.

Claims 84 and 89-92 are rejected under 35 U.S.C. 103(a) as being unpatentable over Japanese document 62-209412 (Jp'412) in view of Kern patent number 4,601,545.

Jp'412 discloses the limitations therein including the following: an electro-active lens (English abstract); an electro-active material of a substantial constant thickness (English abstract, Figures 1 and 2 with the electro-active material disclosed as a "layer" and from what is disclosed in Figures 1 and 2 the layer would inherently have a "substantially constant thickness"); a plurality of conductive electrodes arranged in a grid or array (Figures 1 and 2); comprising a plurality of elements (Figures 1 and 2,

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electrodes "11" as the plurality of elements); each grid or array element as an electrode (Figures 1 and 2, electrodes "11"); each electrode isolated from other electrodes by an insulating material (English abstract); the electro-active material containing a liquid crystal (English abstract); the grid or array of electrodes in electrical contact with at least one layer of electro-active material (English abstract, Figures 1 and 2); the optical power of the lens is varied by altering an applied voltage from a power source to individual electrodes of the grid or array (English abstract); the electro-active material causing a change in the refractive index of the electro-active material (English abstract). It is believed that the change in refractive index would be at least 0.02 units per volt, this being reasonably based upon Jp'412 disclosing the changing index of refraction producing a changing optical power of the electro-active lens (English abstract) similar to that of the claimed invention.

Jp'412 discloses as is set forth including the electro-optic layer as a liquid crystal layer (English abstract) but does not specifically disclose the use of an alignment layer to align molecules of the electro-active material. Kern teaches that in an electro-active lens using liquid crystal as the electro-active material (abstract) that it is desirable to use an alignment layer to align molecules of the electro-active material for the purpose of providing the required alignment of the liquid crystal material which may then be used to provide the desired index of refraction change (column 1, line 42, column 4, line 6). Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to have the electro-active lens of Jp'412 as comprising an alignment layer since Kern teaches that in an electro-active lens using liquid crystal as



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the electro-active material, that it is desirable to use an alignment layer to align molecules of the electro-active material for the purpose of providing the required alignment of the liquid crystal material which may then be used to provide the desired index of refraction change.

In reference to claim 89, Jp'412 discloses as is set forth above but does not specifically disclose the grids or arrays as substantially circular and concentric with respect to one another. Kern further teaches that in an electro-optical lens using electrodes arranged in a grid or array (Abstract, Figure 1) that the electrodes can either be arranged in a matrix array similar to that of JP'412 (Kern, Figure 1 and Jp'412 Figure 2) or can be arranged in an array which is substantially circular and concentric for the purpose of providing the required electro-optical effect (Figure 5c, column 5, line 40). Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to have the array of Jp'412 as a circular and concentric array since Kern teaches that that in an electro-optical lens using electrodes arranged in a grid or array, that the electrodes can either be arranged in a matrix array or can be arranged in an array which is substantially circular and concentric for the purpose of providing the required electro-optical effect.

### ***Response to Arguments***

Applicant's arguments filed October 18, 2004 with respect to the Birdwell reference have been considered but, with respect to the rejected claims set forth above, they are not persuasive. Applicant argues that Birdwell fails to disclose a plurality of conductive electrode grids or arrays comprising a plurality of elements wherein each

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grid or array element is an electrode. As stated above, the assumed meaning of this limitation is a plurality of conductive electrodes arranged in a grid or array comprising a plurality of elements wherein each grid or array element is an electrode. Birdwell specifically describes the conductive elements arranged in an array (column 13, line 10) thereby disclosing a plurality of conductive electrodes arranged in a grid or array. Furthermore, if the intended meaning was a "plurality of electrode grids or arrays", Birdwell discloses this as well (Figure 4B, 5A, and column 13, line 10, Birdwell discloses a first electrode array ("72") and a second electrode array ("74") i.e. a plurality of electrode grids or arrays). Birdwell further discloses each grid or array element as an electrode (Figures 4B, 5A, column 13, line 10 re elements "48" and "52" within the arrays). Applicant further argues that column 16 of Birdwell apparently teaches the interconnection section and not the electrodes as insulated. The examiner disagrees. Column 16, lines 36-40 state "Fig 13C shows how the individual electrodes 146 cross over other electrodes, so as to be interconnected, the electrodes 146 having an interconnection section 116 and being separated by a suitable insulator 166". Applicant believes that this sentence implies that the interconnection section and not the electrodes are separated by a suitable insulator. However, if this was the case the sentence would read "having an interconnection section 116 being separated by a suitable insulator 166" (with the "and" omitted). However, the sentence reads "an interconnection section 116 and being separated by a suitable insulator". The "and" is apparently going back to the "electrodes" thereby stating that it is the electrodes and not the interconnection section that is insulated.

With respect to Kern, applicant argues that Kern does not disclose "a plurality of conductive electrode grids or arrays comprising a plurality of elements wherein each grid or array element is an electrode". The examiner disagrees with this portion of applicant's arguments and believes that Kern does disclose these limitations. However, applicant further argues that Kern does not disclose "each electrode isolated from other electrodes by an insulating material" and the examiner agrees with this and believes that the Kern reference has been overcome for this reason.

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

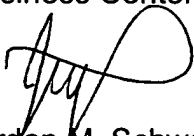
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jordan M. Schwartz whose telephone number is (571)

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272-2337. The examiner can normally be reached on Monday to Friday (8:00-5:30), alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Georgia Y. Epps can be reached at (571) 272-2328. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Jordan M. Schwartz  
Primary Examiner  
Art Unit 2873  
December 29, 2004